

LETTER OF TRANSMITTAL

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WE ARE SENDING YOU ☒ Attached ☒ Under separate cover via FEDERAL EXPRESS the following items:

- [illegible]

☐ For approval ☐ Approved as submitted ☐ Resubmit_____copies for approval
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[illegible]

SIGNED:

Frank G. Small IV

WILLIAM W. DUNNELL IV

January 30, 1990

New Jersey Department of Environmental Protection
Bureau of Federal Case Management
401 East State Street
Trenton, NJ 08625

ATTN: Edgar G. Kaup
Case Manager

SUBJ: L.E. Carpenter
Initial Remedial Alternative Development and Screening

Dear Ed:

This letter presents the initial development and screening of remedial alternatives for contamination at the L.E. Carpenter site. The attached table includes a range of remedial technologies which have been evaluated to determine their potential applicability to the contaminants at the site. A more detailed evaluation and assessment of remedial technologies selected from this process will be considered during the actual Feasibility Study.

The primary goal of this preliminary screening of remedial alternatives was to identify various remedial options and select several for future consideration during the Feasibility Study. Although some remedial technologies are noted to be inapplicable at the site, it is possible that they might be considered in a combined approach with another technology in future evaluation of remedial approaches.

If you have any questions, please call.

Sincerely,

GEOENGINEERING, INC.



William W. Dunnell IV
Project Manager

WWD/avm
cc C. Anderson
R. Hahn
M. Rodburg

INITIAL SCREENING OF REMEDIAL ALTERNATIVES
L.E. CARPENTER & CO.
WHARTON, NEW JERSEY

GROUNDWATER

GENERAL RESPONSE ACTION	REMEDIAL TECHNOLOGY	PROCESS OPTIONS	DESCRIPTION	SCREENING COMMENTS
NO ACTION	NONE	NONE	NO ACTION	
COLLECTION/ DISCHARGE	GROUNDWATER EXTRACTION	EXTRACTION WELLS	SERIES OF WELLS TO EXTRACT CONTAMINATED GROUNDWATER	POTENTIALLY APPLICABLE
		EXISTING WELLS		
	PRODUCT SKIMMING	EXTRACTION WELLS	SERIES OF WELLS TO EXTRACT FLOATING PRODUCT	POTENTIALLY APPLICABLE; DOES NOT ADDRESS DISSOLVED GROUNDWATER CONTAMINATION
		EXISTING WELLS		
	GROUNDWATER EXTRACTION/ PRODUCT SKIMMING	EXTRACTION WELLS	SERIES OF WELLS TO EXTRACT GROUNDWATER & FLOATING PRODUCT	POTENTIALLY APPLICABLE
		EXISTING WELLS		
	SUBSURFACE DRAINS	INTERCEPTOR TRENCH	PERFORATED PIPE IN TRENCH WITH POROUS BACKFILL TO COLLECT FLOATING PRODUCT & CONTAMINATED GROUNDWATER	POTENTIALLY APPLICABLE; APPROPRIATE FOR SHALLOW GROUNDWATER ONLY
	VAPOR EXTRACTION	VAPOR EXTRACTION WELLS	SERIES OF WELLS TO EXTRACT VOLATILE ORGANIC VAPORS	POTENTIALLY APPLICABLE
	ON-SITE DISCHARGE	INFILTRATION GALLERY	EXTRACTED GROUNDWATER DISCHARGED TO INFILTRATION GALLERY OR ON-SITE TREATMENT SYSTEM	POTENTIALLY APPLICABLE WITH TREATMENT
		ON-SITE TREATMENT SYSTEM		POTENTIALLY APPLICABLE
	OFF-SITE DISCHARGE	DEEP WELL INJECTION	EXTRACTED GROUNDWATER DISCHARGED TO DEEP WELL INJECTION SYSTEM	AQUIFER NOT SUITABLE FOR INJECTION OF CONTAMINANTS
		P.O.T.W.	EXTRACTED GROUNDWATER DISCHARGED TO P.O.T.W. FOR TREATMENT	POTENTIALLY APPLICABLE
		ROCKAWAY RIVER	EXTRACTED GROUNDWATER DISCHARGED TO ROCKAWAY RIVER	POTENTIALLY APPLICABLE WITH TREATMENT

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COLLECTION/ TREATMENT DISCHARGE	SEE ABOVE (COLLECTION)			
	BIOLOGICAL TREATMENT	AEROBIC/ ANAEROBIC	DEGRADATION OF VOLATILE ORGANIC COMPOUNDS	POTENTIALLY APPLICABLE
	IN-SITU TREATMENT	BIO RECLAMATION	INJECTION OF BACTERIA/NUTRIENTS TO DEGRADE CONTAMINATION	POTENTIALLY APPLICABLE
	OFF-SITE TREATMENT	P.O.T.W.	EXTRACTED GROUNDWATER DISCHARGED TO P.O.T.W. FOR TREATMENT/DISPOSAL	POTENTIALLY APPLICABLE
		HAZ WASTE DISPOSAL FACILITY	EXTRACTED GROUNDWATER TRANSPORTED TO FACILITY FOR TREATMENT/DISPOSAL	POTENTIALLY APPLICABLE (DEPENDING ON VOLUME)
	PHYSICAL TREATMENT	AIR STRIPPING	MIXING OF AIR AND GROUNDWATER IN PACKED COLUMN TO PROMOTE AERATION AND REMOVAL OF VOLATILE ORGANIC COMPOUNDS	POTENTIALLY APPLICABLE
		CARBON ADSORPTION	CHANNELLING OF PUMPED GROUNDWATER THROUGH ACTIVATED CARBON SYSTEM TO REMOVE VOLATILE ORGANIC COMPOUNDS	POTENTIALLY APPLICABLE
		ULTRAVIOLET TREATMENT	DESTRUCTION OF VOLATILE ORGANICS BY ULTRAVIOLET LIGHT	POTENTIALLY APPLICABLE
	ON-SITE DISCHARGE	COLLECTION/ DISCHARGE	SEE ABOVE (COLLECTION/DISCHARGE)	SEE ABOVE (COLLECTION/DISCHARGE)
	OFF-SITE DISCHARGE	COLLECTION/ DISCHARGE	SEE ABOVE (COLLECTION/DISCHARGE)	SEE ABOVE (COLLECTION/DISCHARGE)

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GENERAL RESPONSE ACTION	REMEDIAL TECHNOLOGY	PROCESS OPTIONS	DESCRIPTION	SCREENING COMMENTS
<pre> graph LR CONTAINMENT[CONTAINMENT] --> VERTICAL_BARRIERS[VERTICAL BARRIERS] CONTAINMENT --> CAP[CAP] VERTICAL_BARRIERS --> SLURRY_WALL_PASSIVE[SLURRY WALL/PASSIVE CONTAINMENT] VERTICAL_BARRIERS --> SLURRY_WALL_PUMPING[SLURRY WALL WITH PUMPING SYSTEM] CAP --> CLAY_SOIL[CLAY AND SOIL] CAP --> CONCRETE[CONCRETE] CAP --> ASPHALT[ASPHALT] CAP --> MULTIMEDIA[MULTIMEDIA] </pre>	VERTICAL BARRIERS	SLURRY WALL/ PASSIVE CONTAINMENT	BENTONITE SLURRY FILLED TRENCH AROUND CONTAMINATED AREA	POTENTIALLY APPLICABLE; MAY REQUIRE ACTIVE CONTROLS
		SLURRY WALL WITH PUMPING SYSTEM	BENTONITE SLURRY FILLED TRENCH AROUND CONTAMINATED AREA WITH DEWATERING SYSTEM	POTENTIALLY APPLICABLE
	CAP	CLAY AND SOIL	COMPACTED CLAY AND SOIL OVER CONTAMINATED AREA	POTENTIALLY APPLICABLE WITH VERTICAL BARRIER
		CONCRETE	CONCRETE SLAB OVER CONTAMINATED AREA	POTENTIALLY APPLICABLE WITH VERTICAL BARRIER
		ASPHALT	ASPHALT COVER OVER CONTAMINATED AREA	POTENTIALLY APPLICABLE WITH VERTICAL BARRIER
		MULTIMEDIA	COMBINATION OF SYNTHETIC LINER AND SOIL OVER CONTAMINATED AREA	POTENTIALLY APPLICABLE WITH VERTICAL BARRIER

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SOIL

GENERAL RESPONSE ACTION	REMEDIAL TECHNOLOGY	PROCESS OPTIONS	DESCRIPTION	SCREENING COMMENTS
NO ACTION	NONE	NONE	NO ACTION	
COLLECTION/TREATMENT	EXCAVATION	ON-SITE TREATMENT/DISPOSAL	REMOVAL OF CONTAMINATED SOILS FOR TREATMENT/DISPOSAL	POTENTIALLY APPLICABLE
		OFF-SITE TREATMENT/DISPOSAL		
	PHYSICAL TREATMENT	FIXATION	IMMOBILIZATION OF CONTAMINANTS IN SOIL	POTENTIALLY APPLICABLE; ABILITY TO FIX ORGANICS NEEDS INVESTIGATION
		VITRIFICATION	ELECTRICAL SOIL MELTING AND THERMAL DESTRUCTION OF CONTAMINANTS	POTENTIALLY APPLICABLE (DEPENDING ON VOLUME)
		BIORECLAMATION	INJECTION OF BACTERIA/NUTRIENTS TO DEGRADE CONTAMINATION	POTENTIALLY APPLICABLE
		VAPOR EXTRACTION	SERIES OF WELLS TO EXTRACT VOLATILE ORGANIC VAPORS	POTENTIALLY APPLICABLE
		INCINERATION	THERMAL DESTRUCTION OF CONTAMINANTS	POTENTIALLY APPLICABLE
	RECYCLING	REUSE ON-SITE	ON-SITE USE AFTER TREATMENT	POTENTIALLY APPLICABLE
		REUSE OFF-SITE	OFF-SITE USE AFTER TREATMENT	POTENTIALLY APPLICABLE
	OFF-SITE TREATMENT	RCRA FACILITY	CONTAMINATED MATERIAL TRANSPORTED TO FACILITY FOR DISPOSAL/TREATMENT	POTENTIALLY APPLICABLE
		RECYCLING FACILITY	CONTAMINATED MATERIAL TRANSPORTED TO RECYCLING PLANT FOR TREATMENT AND REUSE (APHALT, CONCRETE MIX)	POTENTIALLY APPLICABLE